



# INSURING TANZANIAN SMALLHOLDER FARMERS IN THE FACE OF CLIMATE EXTREMES

– COP 22, EU Side Event –

Christoph Gornott



## Outline

1. Introduction & overview
2. Crop insurance schemes
3. Tanzanian yield loss assessment

16 November 2016



A photograph of a sorghum field with tall stalks and grain heads. In the background, there are rolling green mountains under a blue sky with scattered white clouds. The scene is captured during the day, likely in the late afternoon or early morning, given the soft lighting.

## WHAT ARE THE INFLUENCING FACTORS OF YIELD LOSSES?

### 1. Weather attributable factors

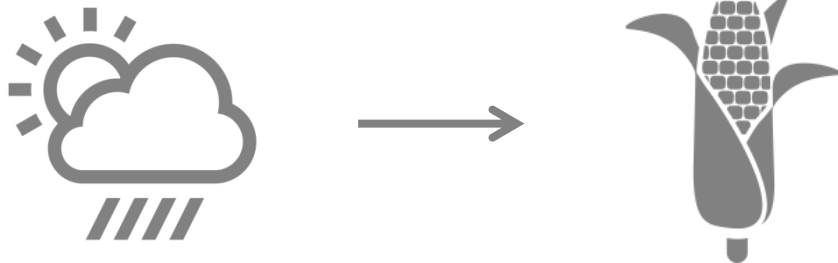
1. Water supply
2. Temperature
3. Solar radiation

### 2. Non-weather (idiosyncratic) factors

1. Agronomic management and access to inputs
2. Knowledge and education
3. Subsidies and prices

# INSURANCE SOLUTIONS AGAINST CROP YIELD LOSSES

- **Coverage of the weather-related perils**
- Idiosyncratic risks are uncovered
- Index based calculation of claims
- Minimization of the basic risk
  - Spatial basic risk
  - Product design effect basic risk



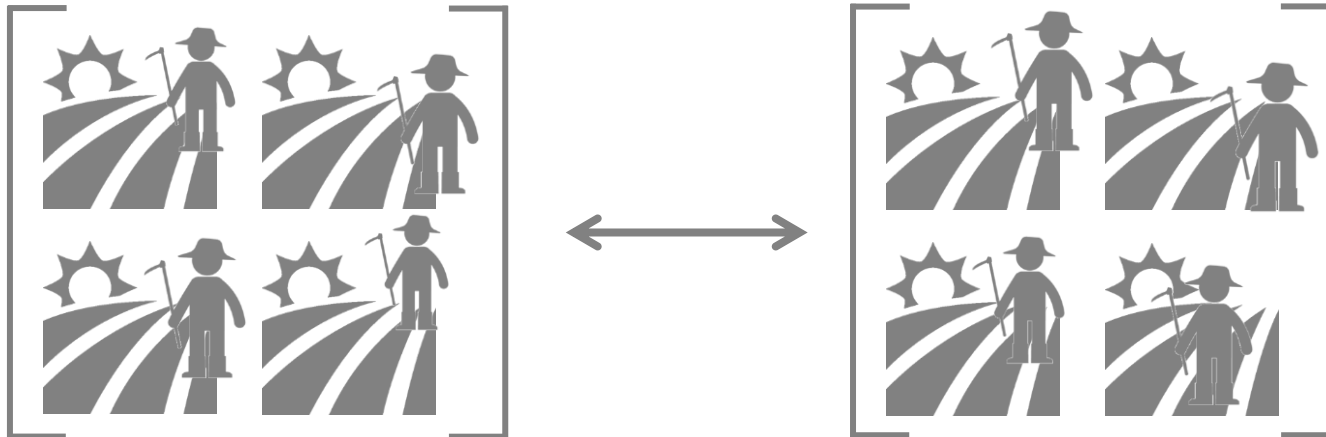
# INSURANCE SOLUTIONS AGAINST CROP YIELD LOSSES

- Coverage of the weather-related perils
  - Idiosyncratic risks are uncovered
  - Index based calculation of claims
  - Minimization of the basic risk
    - Spatial basic risk
    - Product design effect basic risk
- By using crop models and remote sensing



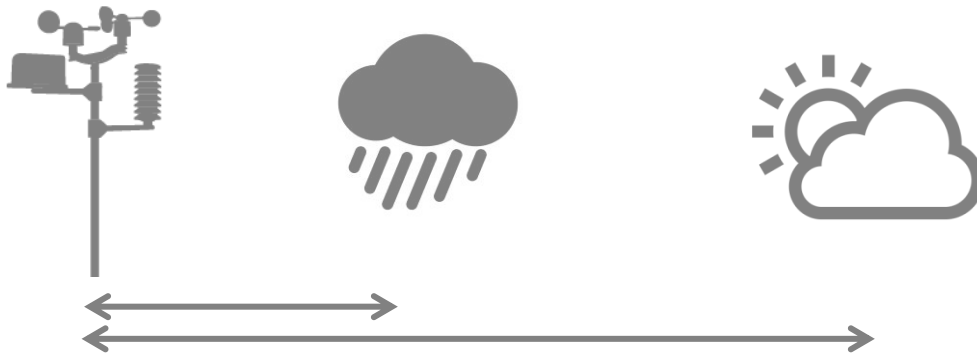
# INSURANCE SOLUTIONS AGAINST CROP YIELD LOSSES

- Coverage of the weather-related perils
- Idiosyncratic risks are uncovered
- Index based calculation of claims (Coping with systematic risk)
- Minimization of the basic risk
  - Spatial basic risk
  - Product design effect basic risk



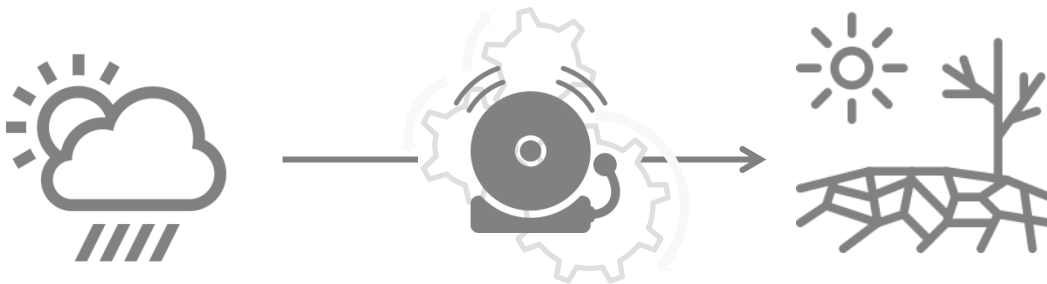
# INSURANCE SOLUTIONS AGAINST CROP YIELD LOSSES

- Coverage of the weather-related perils
- Idiosyncratic risks are uncovered
- Index based calculation of claims
- Minimization of the basic risk
  - Spatial basic risk
  - Product design effect basic risk



# INSURANCE SOLUTIONS AGAINST CROP YIELD LOSSES

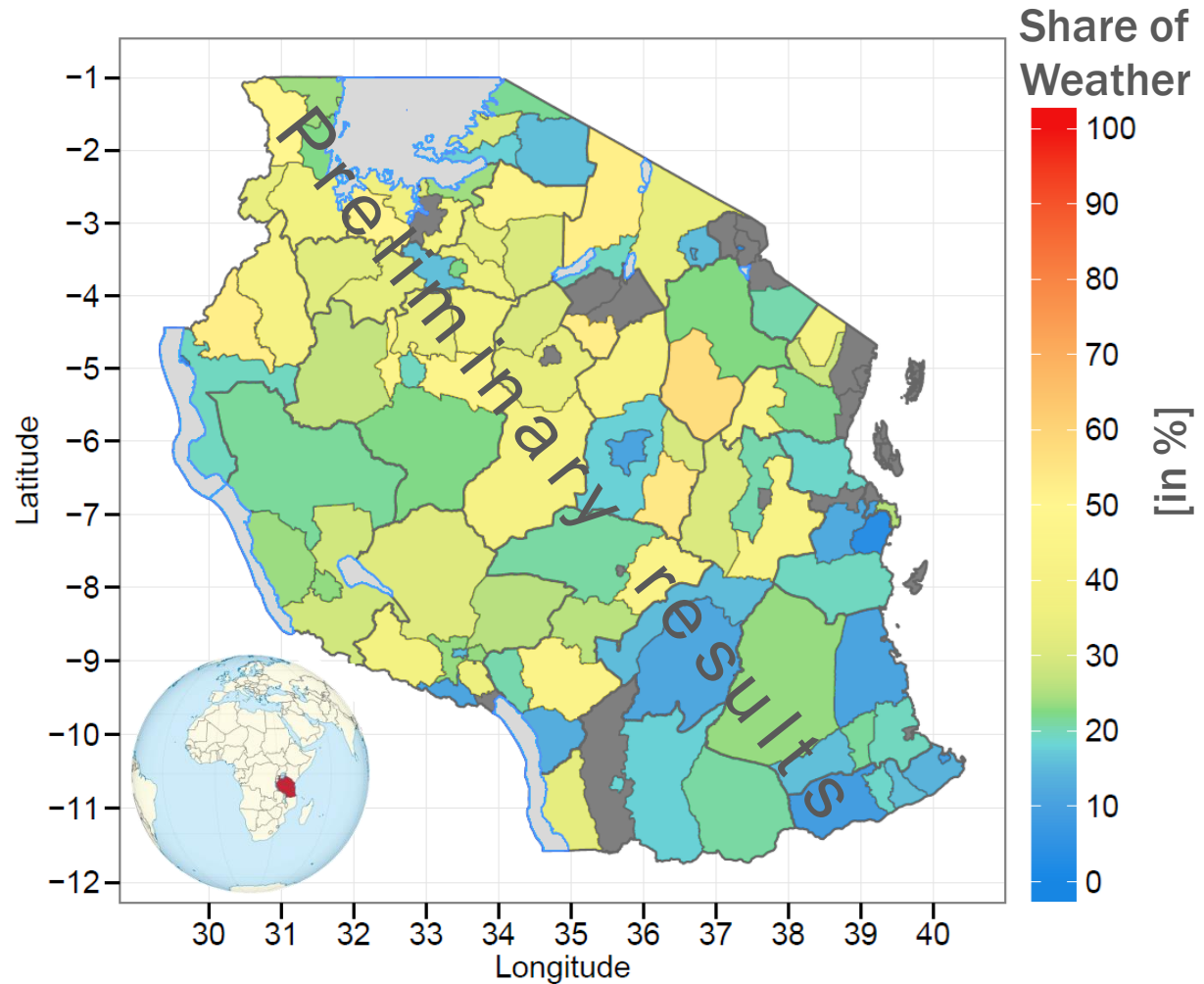
- Coverage of the weather-related perils
  - Idiosyncratic risks are uncovered
  - Index based calculation of claims
  - Minimization of the basic risk
    - Spatial basic risk
    - Product design effect basic risk
- (Better coverage of actual yield losses than Weather Index Insurances)





# WEATHER-RELATED YIELD LOSSES IN COMPARISON TO ALL YIELD LOSSES

Only  $\frac{1}{3}$  of the  
yield variability  
is attributable  
to weather







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Munich RE 



Climate-KIC



## CONCLUSION

- Extreme yield losses are captured by our crop models
- Development of an area-based micro insurance scheme
- Strong collaboration with the Munich Re
- Integration of local partners from Sub-Saharan Africa



POTSDAM INSTITUTE FOR  
CLIMATE IMPACT RESEARCH



Joint Side Event of the Potsdam Institute for Climate Impact Research (PIK) and the  
Munich Climate Insurance Initiative (MCII)

# CLIMATE RISK INSURANCE AS AN ADAPTATION TOOL FOR THE MOST VULNERABLE

## Presenters

**Christoph Gornott (PIK)**

**Laura Schäfer (MCII)**

## Panelists

**Hans Joachim Schellnhuber (PIK)**

**Peter Höppe (MCII, Munich Re)**

**Branko Wehnert (GIZ)**

**Karsten Löffler (Allianz Climate Solutions)**

Moderator: **Kira Vinke (PIK)**

*EU Pavilion, Blue zone – November, 16<sup>th</sup> 10:30-12:00*



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